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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/429,262	10/29/1999	HO-JIN KWEON	03364.P021	5716

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EXAMINER

DOVE, TRACY MAE

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 12/06/2001

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/429,262

Applicant(s)

Kweon

Examiner

Tracy Dove

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Sep 24, 2001
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

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### **DETAILED ACTION**

This Office Action is in response to the communication filed on 9/24/01. Applicant's arguments have been considered, but are not persuasive. Claims 1-8 remain rejected in view of the prior art of record. This Action is made **FINAL**, as necessitated by amendment.

#### ***Specification***

The amendment filed 9/24/01 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: "non-metallic alkoxide", "formed by the reaction of an alcohol with a metal or non-metal", and "non-metallic oxide". The only non-metal supported by the original specification is silicon. The specification cannot be broadened to include other non-metals (or non-metallic alkoxides) that were not disclosed by the specification as originally filed. Similarly, the specification cannot be broadened to include other metals not disclosed by the original specification. The original specification only supports the elements "Mg, Al, Co, K, Na, Ca, Si, Ti and Sr". Examiner suggests amending the specification to recite "an alkoxide of one of the following elements selected from the group consisting of Mg, Al, Co, K, Na, Ca, Si, Ti and Sr".

Note that the amended claims recite "Ai" in the paragraph on page 4, line 4. The original specification recited "Si". Correction is required because "Ai" is not an element.

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Applicant is required to cancel the new matter in the reply to this Office action.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-8 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 recites "a metallic oxide or non-metallic oxide coated on the active material component, the metallic oxide being selected from the group consisting of Mg, Al, Co, K, Na, Ca, Ti and Sr, and the non-metallic oxide comprising Si". The specification does not support a non-metallic oxide comprising Si because no other non-metals are disclosed. Examiner suggested amending the claim to recite "a metallic oxide or non-metallic oxide coated on the active material component, the metal of the metallic oxide being selected from the group consisting of Mg, Al, Co, K, Na, Ca, Ti and Sr, and the non-metal of the non-metallic oxide is Si".

In claim 2 "a non-metal comprising Si" should be amended to state "a non-metal consisting essentially of Si".

The reasons for rejection of claim 1 also apply to claim 5.

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "the metallic oxide being selected from the group consisting of Mg, Al, Co...", however these elements are not oxides.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by Goda et al., US 6,004,695.

See Office Action of 3/29/01 for the reasons for rejection.

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goda et al., US 6,004,695.

Goda teaches a positive electrode active material of  $\text{Li}_A\text{MnO}_2$  (most preferred). See col. 15, lines 27-54. The surface of the positive electrode active material can be coated with an oxide having a different chemical formula from the positive electrode active material. Silicon oxide is preferred as the oxide for surface treatment. See col. 19, lines 45-62.

Goda does not explicitly teach the coating is formed from an alkoxide solution.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the method of forming the oxide coating (claim 5) is a conventional method. The method of coating the powder with an alkoxide solution and then heat treating the coated powder to form an oxide is the standard sol-gel process (see attached definition of "Sol-gel Process"). The sol-gel process is well known for forming an oxide coating. One of skill would be motivated to use the conventional sol-gel method to form the silicon oxide coated positive active material of Goda.

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As evidence that this method is used in the battery art, Kawakami (6,040,087) teaches an active material dispersed into a sol solution prepared by the hydrolysis, what is called sol-gel method, of alkoxide as a compound of a transition metal and an alcohol and the solution is allowed to stand, the active material is coated with a metal oxide layer which can be obtained by separation and dry heating of the active material dispersed in the sol solution. See col. 15, lines 20-26.

*Response to Arguments*

Applicant's arguments filed 9/24/01 have been fully considered but they are not persuasive.

WANG

All prior art rejections in view of Wang have been withdrawn.

GODA et al.

Applicant argues that nowhere does Goda teach the metal or non-metal used in the present invention.

Examiner disagrees with Applicant's analysis of the Goda reference. As pointed out in the previous Action, Goda teaches a positive electrode active material can be coated with an oxide. Silicon oxide is preferred as the oxide for surface treatment. See col. 19, lines 45-62. Thus, Goda teaches the non-metal oxide of the present invention.

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*Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is (703) 308-8821. The Examiner may normally be reached Monday, Wednesday and Thursday. My supervisor is Gabrielle Brouillette, who can be reached at (703) 308-0756. The Art Unit receptionist can be reached at (703) 308-0661 and the official fax number is (703) 305-3599.

November 29, 2001

  
**CAROL CHANEY**  
**PRIMARY EXAMINER**